REMARKS

I. Amendments to the Specification:

The amendments for pages 29-30 submitted with Applicants' Amendment filed August 17, 2005, were objected to for not being in compliance with 37 C.F.R. § 1.121(b).

In this Amendment, Applicants have amended pages 29-30 in compliance with 37 C.F.R. § 1.121(b) (*see*, **Appendix A**). Applicants note that no new matter has been added by way of the instant amendments to the specification.

Accordingly, Applicants respectfully request that this objection be reconsidered and withdrawn.

II. Amendments to the Claims:

Claims 1-31 and 42-45 are pending in this application.

Claims 7, 23, 24, 26, 29, 31 and 46 have been withdrawn as been drawn to a non-elected invention.

In the instant amendment, claims 1, 2, 4, 5, 7, 8, 10, 11, 15, 17, 19, and 44 have been amended. These amendments are fully supported by the application as filed, and thus contain no new matter.

Claims 9 and 14 have been canceled in accordance with the Examiner's instructions (*see*, Office Action, page 2, second paragraph), and presented as new claims 47 and 48 respectively.

Also, claims 46-52 have been newly added. Support for the new claims can be found throughout the application as filed and in the original claims. No new matter has been added by way of the instant amendments to the claims.

III. Clarifications Regarding Applicants' Response to Restriction Requirement:

In response to Applicants' arguments filed August 17, 2005 with respect to the provisions of MPEP § 803.04 that ten nucleotide sequences may be searched in a single application, the Office Action stated that two sequences (*i.e.*, SEQ ID NOS: 28 and 38) have been searched in the instant application.

The Office Action further stated that the Applicants did not give **any** reasons for:

(i) why the USPTO should consider searching additional sequences in the instant application; and

(ii) why such a search would not constitute an undue burden.

Applicants respectfully submit that this is not accurate.

Applicants draw the Examiner's attention to the arguments presented in the Response to Species Election Pursuant to 35 U.S.C. § 121 filed November 22, 2004 and the Amendment filed August 17, 2005. Specifically, Applicants argued, in relevant part, that:

(a) "when the instant application was originally filed, the Examiner who first examined this case (Examiner Joyce Tung) restricted the claims into three groups (*see,* Appendix A [of Amendment filed August 17, 2005]). Group I consisted of claims drawn to a synthetic oligonulceotide complementary to a portion of the 5' untranslated region of the hepatitis C virus, classified in class 536, subclass 23.1 or 24.3. Group I claims consisted of essentially the same claims as those that are currently pending in the instant application. The previous Examiner did not require a species election, either in making the Restriction Requirement, or throughout the prosecution of the application. Thus, Applicants respectfully aver that the United States Patent and Trademark Office has previously determined (implicitly) that it would not pose an undue burden to examine the currently pending claims without a species election." (*see,* page 2, fifth paragraph of Amendment filed August 17, 2005, emphasis added);

(b) "Applicants respectfully note that the oligonucleotide sequences in question are only 20-30 nucleotides in length and are readily searchable using the computer algorithms and sequence databases available to the USPTO." (*see,* page 13, first full paragraph, Amendment filed August 17, 2005, emphasis added); and

(c) "Applicants note that the mere fact that the sequences each have a "distinct nucleotide sequence" is not dispositive to whether it would be an undue burden to examine them together. This is particularly true in the instant case where a simple search for all possible HCV antisense sequences could be conducted simply and efficiently by using a single

oligonucleotide search string (namely, the HCV target mRNA sequence provided in Figure 1 of the application-as-filed)." (*see*, page 13, middle of first full paragraph, emphasis added).

Accordingly, Applicants respectfully assert they have provided proper arguments for why the USPTO should consider searching more than two sequences in this application, and why such a search would not constitute an undue burden.

With respect to the Examiner's comments regarding the election of ten combinations of sequences for claims 42-45, Applicants draw the Examiner's attention to the Office Action of April 29, 2005 (*see*, page 2, fourth paragraph), where it is stated, in relevant part: "If the selected combination contains ten or fewer sequences, all of the sequences of the combination will be searched. If the selected combination contains more than ten sequences, the combination will be searched until one nucleotide sequence is found to be allowable" (emphasis added). Based on the language of the Office Action, Applicants were under the impression that Applicants were required and entitled to select ten combinations of sequences for claims 42-45, and accordingly did so.

The Examiner has used the term "election" with respect to the sequences SEQ ID NO:28 and SEQ ID NO:38. Applicants request clarification from the Examiner as to whether the Examiner meant "election" or "restriction" with respect to the claims that read on the above-recited species. If the Examiner indeed meant "election" of species, then Applicants respectfully aver that they are entitled to the examination of additional species upon the allowance of the elected species. In this context, Applicants note that the Examiner has indicated that claims reciting SEQ ID NO:28 are free of the prior art (*see*, Office Action, page 2, third paragraph).

IV. Allowable Subject Matter:

Applicants gratefully note that the Examiner has indicated that claims 21 and 42 are allowable.

In addition, Applicants note that the Examiner has indicated that "[s]ince no prior art was found for SEQ ID NO:28, all of the combinations containing SEQ ID NO:28 are free of the prior art" (*see*, Office Action, page 2, third paragraph, last but one line). Accordingly Applicants

respectfully aver that amended claim 44 and new claims 50 and 52 should also be found allowable.

Similarly, Applicants aver that since the Examiner has found claim 21 to be allowable, new claim 49 should also be found allowable.

V. Withdrawal of Prior Objections and Rejections:

Applicants note that the Examiner has withdrawn the objection regarding the incorrect address for the ATCC provided at page 70, line 12.

Applicants gratefully note that the Examiner has withdrawn all but one of his rejections under 35 U.S.C. § 112, second paragraph, listed at pages 3-4 of the Office Action of April 29, 2005.

Finally, Applicants note that the Examiner has withdrawn his rejection of claims 1, 8 and 12 under 35 U.S.C. § 102(b) as allegedly being anticipated by Sheridan (WO 93/13224) (*see,* Office Action of April 29, 2005, page 5, last paragraph).

VI. Rejection under 35 U.S.C. § 112, second paragraph:

Claims 1-6, 8-20, 22, 25, 27, 28, 30, 43 and 44 stand rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite for the recitation of "synthetic oligonucleotide" (*see,* Office Action, page 3, second paragraph).

As a preliminary matter, Applicants note that this rejection has been rendered moot as Applicants have amended claims 1 and 2 so as not to recite the phrase at issue. These claims now more broadly recite, in relevant part: "An oligonucleotide.." Clearly, this recitation includes within its scope, oligonucleotides that are chemically synthesized.

With respect to the rejection directed to the recitation of "synthetic oligonucleotide," Applicants respectfully point out that MPEP § 2173.02 states that "the requirement for definiteness of 35 U.S.C. § 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available." In addition, this section of the MPEP notes that "[s]ome latitude in

the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire." Furthermore, this section notes that " [d]efiniteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) the content of the particular application disclosure;

(B) the teachings of the prior art; and

(C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

Accordingly, the documents Applicants submitted with the prior Amendment should have been considered under the above standard of the MPEP. Instead, the Office Action merely states that "neither of the references cited defines the term;" and that "the instant application at pages 10-11 does not define the term..." Applicants disagree completely with these statements.

First, Applicants aver that the application provides clear guidance as to the scope of the term "synthetic oligonucleotides" at page 10, line 26 to page 11, line 1. Notwithstanding this fact, Applicants note that there has never been a statutory requirement under 35 U.S. C. § 112, second paragraph, that a term of a claim be defined in the specification, especially, as here, where it is well-known and used in the art (as evidenced by the references submitted with the last Amendment, which were prior to Applicants' filing date). In the arguments regarding the reason for this rejection, the Examiner appears to be creating a *per se* rule that 35 U.S.C. § 112 mandates definition of each term in a claim in the specification. However, the Federal Circuit has soundly disabused such a requirement (*see, Bancorp Services L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004)).

Accordingly, even though Applicants have presently removed the term "synthetic oligonucleotide" from the claims, Applicants respectfully contend that this term is definite as required by 35 U.S.C. § 112, second paragraph.

VII. Rejections under 35 U.S.C. § 112, first paragraph:

(a) Claims 2-6, 8-20, 25, 27, 28, 30, 43, and 45 stand rejected under 35 U.S.C. § 112, first paragraph, for purportedly failing to comply with the written description requirement (*see*, Office Action, page 3, last paragraph).

Applicants respectfully traverse this rejection.

This rejection turns on independent claim 2. This rejection was first raised with respect to the previous version of claim 2, which recited, "A synthetic oligonucleotide comprising a sequence complementary to at least two non-contiguous regions of an HCV messenger or genomic RNA." Although Applicants are of the opinion that this claim is fully described as required under 35 U.S.C. § 112, first paragraph, Applicants previously amended claim 2, solely to expedite prosecution of this application, to recite further structural limitations (*see*, Amendment dated August 17, 2005).

Claim 2, as amended on August 17, 2005, recites: "A synthetic oligonucleotide comprising a sequence complementary to at least two non-contiguous regions of an HCV messenger or genomic RNA, wherein one of the at least two non-contiguous regions is complementary to a 5′ untranslated region of the HCV messenger or genomic RNA, and wherein one of the at least two non-contiguous regions is complementary to a region selected from the group consisting of a 5′ untranslated region of the HCV messenger or genomic RNA, and a region within +1 to +48 of the HCV messenger or genomic RNA."

In response to this amendment to claim 2, the Examiner merely reiterated the prior rejection stating that "[t]he instant application does not contain an adequate written description of all of the functional regions listed in the claims. A functional description of the nucleic acids is not sufficient to meet the written description requirement."

Applicants are puzzled by this argument. The Federal Circuit has held that "[t]he written description requirement implements the principle that a patent must describe the technology that is sought to be patented; the requirement serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." *Capon v.*

Eshhar v. Dudas, 03-1480, -1481 (Fed. Cir. 2005). Applicants respectfully assert that claim 2, as currently amended, fully satisfies the written description requirement.

Claim 2, as currently amended, recites: "An oligonucleotide comprising a sequence complementary to at least two non-contiguous regions of an HCV messenger or genomic RNA, wherein one of the at least two non-contiguous regions is a 5' untranslated region of the HCV messenger or genomic RNA, and wherein one of the at least two non-contiguous regions is a 5' untranslated region of the HCV messenger or genomic RNA, or a region within +1 to +48 of the HCV messenger or genomic RNA.

First, with respect to the phrase, "wherein one of the at least two non-contiguous regions is a 5' untranslated region of the HCV messenger or genomic RNA," Applicants draw the Examiner's attention to Figure 1, which provides a schematic representation of the HCV target mRNA sequence. Specifically, this sequence comprises the structure of the 5' untranslated region of the HCV RNA, and thus provides the written description support for this phrase.

Second, with respect to the phrase, "and wherein one of the at least two non-contiguous regions is a 5' untranslated region of the HCV messenger or genomic RNA, or a region within +1 to +48 of the HCV messenger or genomic RNA," Applicants note that Figure 1, and Tables 1C, 1D, 1E, and Table 2 of the application as filed provide the required written description support for this phrase.

Third, Applicants have provided specific sequences of numerous species of non-contiguous oligonucleotides that fall within the scope of the claimed invention (*see,* Tables 1C, 1D, 1E and Table 2). Applicants note that the written description requirement does not require that every possible species that is encompassed by a given claim be recited in the specification. Rather, all that is required is that a representative number of species be described. In view of the species referred to above, Applicants respectfully contend that they have provided a representative number of species for claim 2.

Because Applicants' specification provides adequate description as well as the structure of numerous species that are encompassed by the pending claims as amended, Applicants respectfully aver that they have met the written description requirement. In light of the

foregoing remarks, Applicants respectfully request that this rejection under 35 U.S.C. § 112, first paragraph (written description), as to independent claim 2, be reconsidered and withdrawn. Because claims 3-6, 8-20, 25, 27, 28, 30, 43 and 45, are dependent on claim 2, and thus have all the limitations thereof, Applicants respectfully request that this rejection under 35 U.S.C. § 112, first paragraph (written description), as to these claims also be reconsidered and withdrawn.

(b) Claims 2-6, 8-20, 25, 27, 28, 30, 43, and 45 stand rejected under 35 U.S.C. § 112, first paragraph, for allegedly being non-enabled (*see*, Office Action, page 4, first full paragraph).

Applicants respectfully traverse this rejection.

In response to Applicants arguments rebutting this rejection, the Office Action states that "[a]pplicants' arguments are not convincing. Since the written description of the claimed invention is inadequate, one of skill in the art cannot make and use the full scope of the claimed invention."

Thus, this rejection appears to be based upon an allegedly inadequate written description of the claimed invention. In view of the arguments above, providing sound reasoning for why Applicants' claimed invention is in compliance with the written description requirement, Applicants respectfully request that this rejection has been rendered moot.

In adddition, Applicants note that the specification as filed provides sufficient guidance to one of ordinary skill in the art to make and use the currently claimed invention without undue experimentation. This is evidenced by the following disclosure in the application:

(i) numerous species of HCV oligonucleotides that fall within the scope of the claimed invention (*see*, above);

(ii) methods of making such oligonucleotides (*see*, for example, Examples 1,and 2, pages 58-62 of the application as filed);

(iii) methods of evaluating oligonucleotides as antisense inhibitors of HCV using four cellular assay systems namely,

(a) inhibition of HCV luciferase fusion protein expression,

(b) inhibition of HCV RNA expression,

(c) inhibition of HCV protein expression, and

(d) RNase H cleavage assays (see, page 31, lines 1-16; page 36, line 4 to page 38, line 27; page 43, lines 1 to 21; and Examples 5, 6 and 7); and

(iv) methods of using these oligonucleotides (see, page 52, line 29 to page 58, line 3).

In light of the foregoing evidence for enablement of the claimed invention, Applicants respectfully request that this rejection under 35 U.S.C. § 112, first paragraph (enablement), as to independent claim 2, be reconsidered and withdrawn. Because claims 3-6, 8-20, 25, 27, 28, 30, 43 and 45, are dependent on claim 2, and thus have all the limitations thereof, be reconsidered and withdrawn, Applicants respectfully request that this rejection under 35 U.S.C. § 112, first paragraph (enablement), as to these claims also be reconsidered and withdrawn.

(c) Claim 30 is rejected under 35 U.S.C. § 112, first paragraph, as purportedly failing to comply with the written description requirement. Specifically, the Office Action states that "[t]he substitution of "sequence" for "strand" is new matter. The sense of the claim before the amendment is that the triplex forming nucleic acid is not covalently bound to the oligonucleotide whereas the sense of the claim as amended is that the triplex forming sequence is covalently bound to the oligonucleotide."

Applicants respectfully traverse this rejection.

According to MPEP § 2131, the "essential goal" of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed. Another objective is to put the public in possession of what the applicant claims as the invention. The written description requirement of the Patent Act promotes the progress of the useful arts by ensuring that patentees adequately describe their inventions in their patent specifications in exchange for the right to exclude others from practicing the invention for the duration of the patent's term.

As a preliminary matter, Applicants note that the Office Action correctly interprets claim 30 to require that the triplex forming sequence is covalently bound to the oligonucleotide.

With respect to the written description rejection, Applicants note that the amendment from "strand" to "sequence" does not raise issues of new matter, as oligonucleotides modified to incorporate the triplex-forming sequences recited in claim 30, are clearly described in Table 1E (*see*, pages 29-30) of the application as filed.

In light of the above, Applicants respectfully request that this rejection under 35 U.S.C. § 112, first paragraph (written description), be reconsidered and withdrawn.

VIII. Rejections under 35 U.S.C. § 102(b):

Claims 2, 6, 8-12, 22, and 45 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Anderson *et al.* (WO 94/05813), because SEQ ID NO:38 of Anderson *et al.* purportedly comprises SEQ ID NO:38 of the instant application.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

According to Table 2 (page 40) of the instant application, SEQ ID NO:38 has the sequence: GGGGUCCUGGAGNNNNNN. In contrast, SEQ ID NO:38 in Anderson *et al.* has the sequence: GGGGTCCTGGAGGCTGCACG. Thus, SEQ ID NO:38 of the instant application is not identical to SEQ ID NO:38 of Anderson *et al.*

Because each and every element set forth in the claims is not found, either expressly or inherently described, in the Anderson reference, Applicants respectfully request that this rejection under 35 U.S.C. § 102(b) of claims 2, 6, 8-12, 22, and 45 be reconsidered and withdrawn.

CONCLUSION

Upon entry of the instant amendment, **claims 1-6, 8, 10-13, 15-22, 25, 27, 28, 30, 42-45, and 47-52** will be pending and under consideration in the instant application.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is now in condition for allowance. If a telephone interview would advance prosecution of the application, the Examiner is invited to call the undersigned at the number listed below.

Applicants request that the USPTO charge the requisite fee of $200.00 to our Deposit Account No. 08-0219 for the two additional independent claims that have been added to this application.

No additional fees are due in connection with this filing; however, if any other fees are due, please charge these fees, or credit any overpayments, to our Deposit Account No. 08-0219.

Respectfully submitted,

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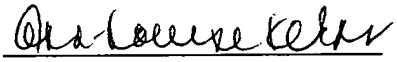
HALE AND DORR LLP

Date: January 18, 2005



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